

Maximo 7.5 Installation



Agenda

- Architecture
- Overview
- What's New
- Installation Options and Settings
- TaskRunner
- Deployment Engine
- Logs
- Concerns
- Troubleshooting
- Resources
- Q&A

Architecture



Architecture

- Application Server
 - WebSphere Application Server 7.0.0.15 (runs support of WebSphere 8)
 - Oracle WebLogic Server 11g Release 1 (10.3.3) and future fix packs
- Database
 - Oracle 10g Release 2 10.2.0.4 , Oracle 11g Release 1, Oracle 11g Release 2
 - Microsoft SQL Server 2008, Microsoft SQL Server 2008 R2, Microsoft SQL Server 2008 SP1
 - DB2 Enterprise Server Edition 9.5.0.7 and future fix packs, DB2 Enterprise Server Edition 9.7.0.3 and future fix packs, DB2 9.8 PureScale
- Directory Server
 - Microsoft Active Directory 2008 R2
 - Tivoli Directory Server v6.3

Architecture

- **Middleware Installer**
 - Microsoft Windows Server 2003 SP2, Microsoft Windows Server 2003 R2 SP2
 - Microsoft Windows Server 2008 SP1, Microsoft Windows Server 2008 R2
 - SUSE Linux Enterprise Server SP2 10.0
 - SUSE Linux Enterprise Server 11.0
 - Red Hat Enterprise Linux v5 U2
 - Red Hat Enterprise Linux v6
 - AIX 6.1
 - AIX 7.1

- Solaris and HP-UX is a manual install of middleware

Architecture

- **Administrative workstation**
 - Windows Server 2003, Windows Server 2003 R2
 - Windows Server 2008, Windows Server 2008 R2
 - Windows Vista
 - Windows XP SP2
 - Windows 7

- **Browser**
 - Internet Explorer 7,8
 - Firefox 3.6

- **Java**
 - Java version 1.6.0 SR8 FP1

Architecture

- **Windows 2008 Server Notes**
 - Security changes to be made prior to installing Maximo
 - Create a local administrator account and use that account to install
 - Disable the Windows Firewall Service during the Maximo install
 - Turn off User Account Control (UAC)
 - Turn off Data Execution Prevention (DEP)

 - Launch any executable, command file, etc.
 - Right-click and select "Run as administrator"

Architecture

- For optimal application performance, plan on one JVM for every 40 users (32-bit OS). The installation program sets maximum memory to 1.5 GB for 32-bit platforms and 4 GB for 64-bit platforms if automatic configuration for WebSphere is selected

Note: Every implementation is different. 40 users per JVM is a guideline. Real World load testing must be done in each implementation to determine that number

Overview



Overview

- Middleware
- process automation engine (Maximo)
- Process Solution Installer (PSI)
- Deployment Engine (DE)
- Fix Pack

Middleware

- IBM middleware components installed automatically via middleware installer
 - Download middleware package(s)
 - Extract all to same location

- Non IBM middleware components must be installed manually before Maximo installation

Middleware

- Database
 - Enable Text Searching
 - Storage
 - User(s) and rights
 - Oracle
 - CURSOR_SHARING=FORCE

Middleware

- J2EE Server
 - Enable Administrative Security if using WebSphere
 - Middleware installer enables
 - Do not configure Application Server Security during Maximo installation. Configure Application Server Security after the installation
 - Remove Program Files from all directory paths if installing on Windows

process automation engine

- Maximo installed on Windows administrative machine
- Contains common functionality Tivoli process automation engine
- Launchpad option – Maximo Asset Management
- Multiple Maximo installations on one administrative machine

Process Solution Installer (PSI)

- Used to install the different components
- PSI provides a common deployment mechanism for Process Solutions
- PSI supports deployment of both Process Manager Products (PMPs) and Integration Modules (IMs)

Deployment Engine (DE)

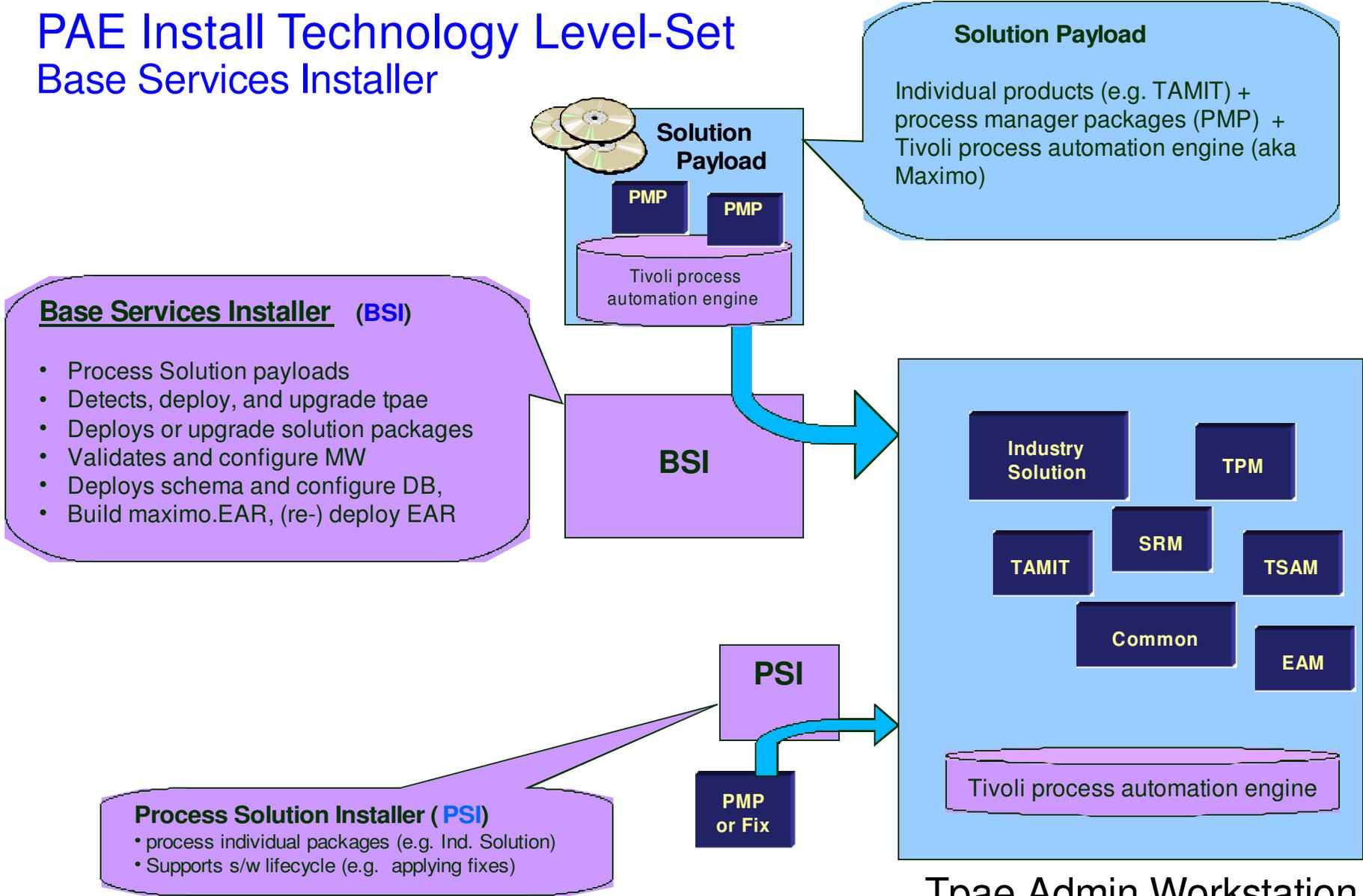
- PSI is based around a common component called *Autonomic Deployment Engine* (DE) which defines an installable package format and provides a set of runtime services used to install those packages
- In order to be installed via PSI, an installable package must adhere to the DE packaging structure
- DE database contains information regarding products installed (c:\ibm\smp\ctg_de\acsi)

Fix Packs

- Collection of APAR fixes

- Uses PSI to install

PAE Install Technology Level-Set Base Services Installer

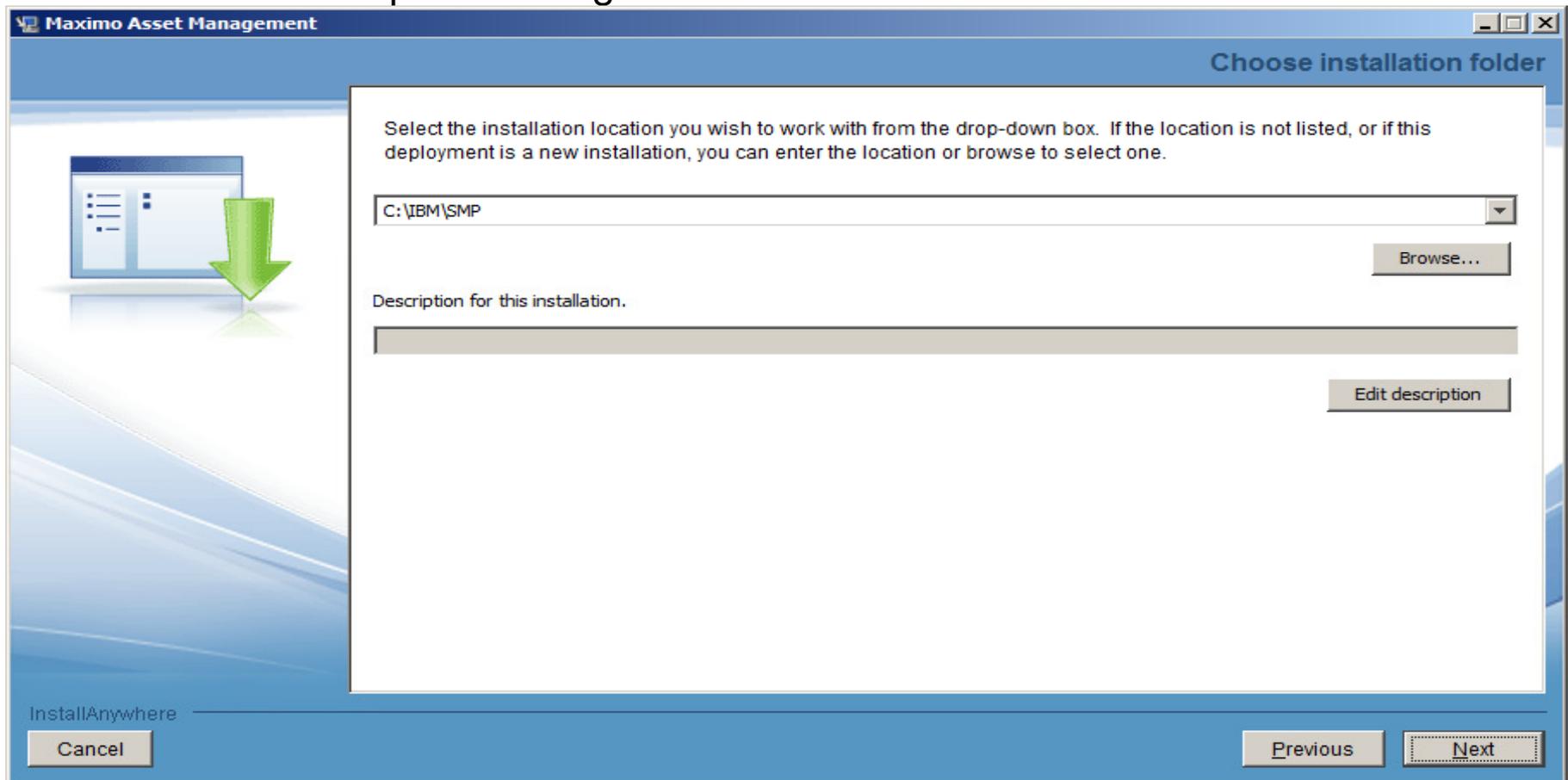


What's New



What's New

- Multiple Maximo installs on same administrative machine as same admin user
 - Install location panel during 7.5 installation



What's New

- No Global Deployment Engine (DE) or local user DE
- Deployment Engine (DE) private to Maximo install (ibm\smp\ctg_de folder)
 - New DE version – 1.4
 - No DE service running (ADE engine)
- Middleware DE is installed inside MWI workspace under DE folder
- DE updated prior to updatedb and EAR deploy

What's New

- New installation logs
- **CTGSummary00.log**
 - Contains the message entries plus a subset of the information currently traced in the trace log
 - Cluttering reduced by eliminating the java class full qualified names and the method names.
 - Timestamp of entries from the new trace can be used to locate detailed logging in the full trace file
- **CTGError.log**
 - Captures only failure output containing
 - Logs to identify run dates and installer version information
 - Any trace with an exception/throwable
 - Severe level traces

What's New

- New installation logs
- **Notes:**
 - While the CTGInstallMessage00.log is about 1% of the messages from the trace, the new CTGSummary00.log trace will contain about 10% of the traced entries
 - The data that goes into the CTGInstallMessage00.log and CTGInstallTrace00.log has not changed

What's New

- Language Pack installation now part of Maximo 7.5 install
 - Base language selected
 - Additional language(s)

- Pre-req checker
 - Middleware pre-req checker
 - Option on launchpad
 - Optional
 - Command line option
 - Inputs through properties file or interactive mode
 - Check middleware products one by one or all together
 - Status report

What's New

Maximo Asset Management Select a language:

Welcome
Installation Planning
▶ Install Product
Information Center
Exit

IBM Maximo Asset Management 7.5 Installation

- 1. Install the middleware (Optional)**
Click on this link to verify that you meet the requirements to install the Middleware.
 [Verify installation requirements](#)

Select the Optional Middleware Link first only if you want to have the DB2 Database, the IBM WebSphere Application Server or the Tivoli Directory Server Installed and Configured. All other databases and Web Applications servers (e.g. BEA Weblogic, Oracle, SQL Server) must be installed manually prior to the installation of IBM Maximo Asset Management.
 [Middleware](#)
- 2. Install IBM Maximo Asset Management 7.5 (Required)**
Select **Maximo Asset Management** below to launch the installation.
 [Maximo Asset Management](#)



What's New

- Pre-req checker

```

C:\Windows\system32\cmd.exe
network.availablePorts.j2ee9201      FAIL      80,135,445,11... 9201
network.availablePorts.j2ee9202      FAIL      80,135,445,11... 9202
network.availablePorts.j2ee9353      FAIL      80,135,445,11... 9353
network.availablePorts.j2ee9405      FAIL      80,135,445,11... 9405
network.availablePorts.j2ee9406      FAIL      80,135,445,11... 9406
network.availablePorts.j2ee9443      FAIL      80,135,445,11... 9443
network.availablePorts.ihs           FAIL      80,135,445,11... 80
network.availablePorts.ihsAdmin      FAIL      80,135,445,11... 8008
Disk#6 <C:\Program Files\IBM\WebS... PASS      161.53GB         1.32GB
Disk#7 <C:\Program Files\IBM\WebS... PASS      161.53GB         477MB
Disk#8 <C:\Program Files\IBM\HTTP... PASS      161.53GB         1.02GB

ALL COMPONENTS :
Property          Result  Found    Expected
=====
C:                PASS    161.53GB 6.46GB

Prereq Scanner Overall Result: FAIL

CTGIN8118I : The Tivoli Pre-requisite Scanner exited with the return code "1"
CTGIN8126I : To start the prerequisite verification utility in interactive mode
or add additional parameters and custom values to the verification process, star
t the utility from the command line:
C:\MX75IN~1\mx75\Install\MWI\SystemRequirements\tpae_req_check.bat
Press any key to continue . . .
    
```

What's New

- Install validation
 - Middleware
 - o Validates the health of the middleware components
 - o Command line option
 - Maximo
 - o Validates the health of the product installation
 - o Command line option

What's New

- **WebSphere Network Deployment v7**
 - Migration option to migrate v6.1 profile to v7
 - Manual install of v7 on same machine as v6.1
 - Migration tool
 - V6.1 no longer useable
 - MWI

- **WebSphere configuration settings to be inline with performance best practices with WebSphere automated configuration**

What's New

- **Performance Enhancement on Deployment**
 - Update of the database (updatedb) is only run once at the end of the install(s)
 - Build and deploy of EAR files task is only run once at the end of the install(s)
 - Both tasks of updating the database and deploy of EAR happens after installation of components are complete. (i.e. after the DE registered the packages)

Installation Options and Settings

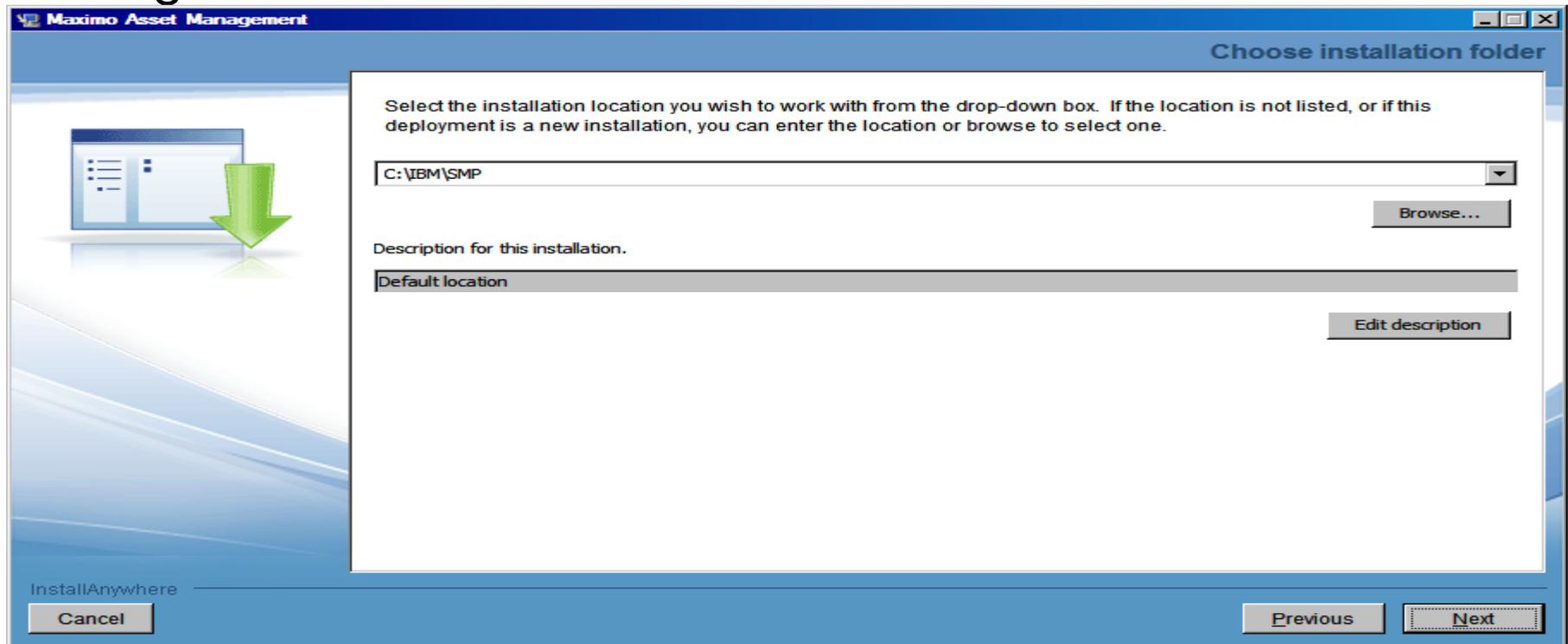


Installation Options and Settings

- Use Middleware Installer for IBM middleware components (DB2, WebSphere, Tivoli Directory Server)
- Remote access to all servers at the Administrator level
- Local Administrator/User to server (not Domain user)
- Maximo must be installed on Windows
- Disable Firewall
- Select Configure manually later when presented

Maximo Installation

- Follow through the screens to the Choose installation folder dialog



- Select installation location

Maximo Installation

- Once install has passed the Location Validation Panel you cannot go back and choose a new installation location without exiting and restarting the installation

Maximo Installation

- Follow through the screens to the Import Middleware Configuration Information dialog

Maximo Asset Management

Import Middleware Configuration Information

If the middleware installation program was not used to install and configure the middleware, click Next. Check this box to import the configuration information recorded by the middleware installation program. Provide the information for the server where the middleware installation workspace is located. Enter a fully qualified host name or IP address. The user ID must have remote access privileges to the server.

Import middleware configuration information

Host name

User ID

Password

Confirm password

Workspace location

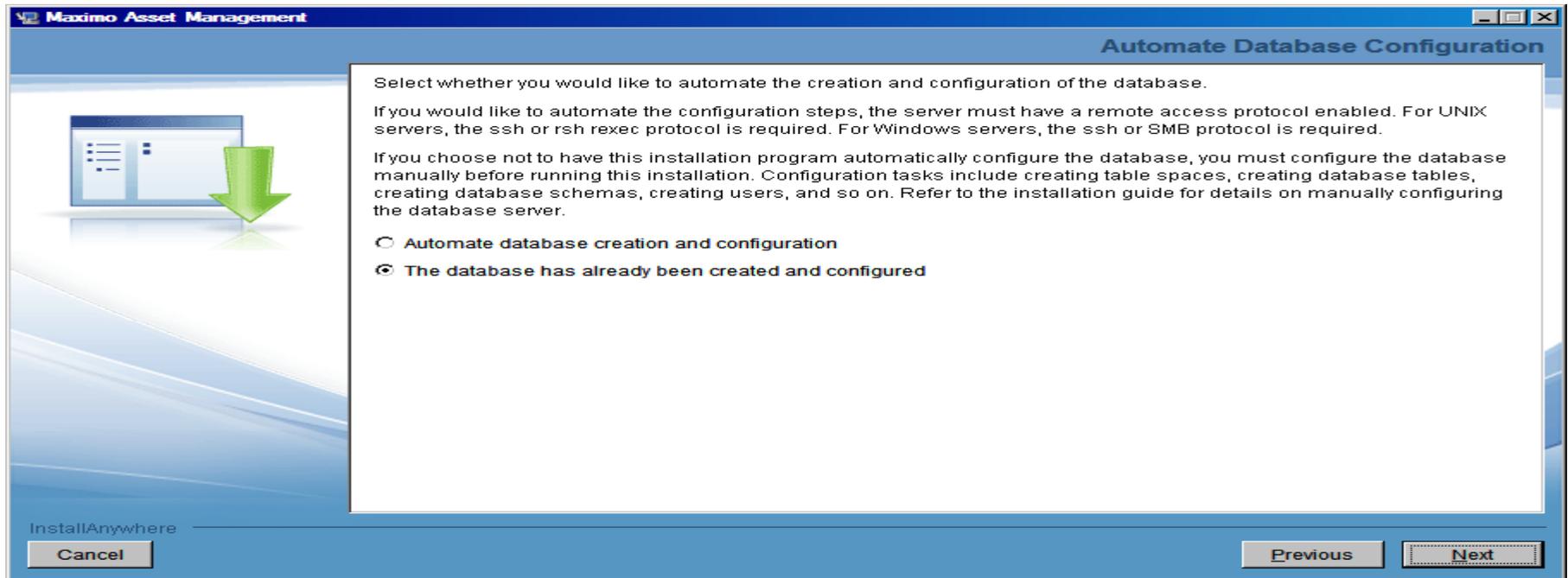
InstallAnywhere

Cancel Previous Next

- Recommendation** - Do not select Import middleware configuration information

Maximo Installation

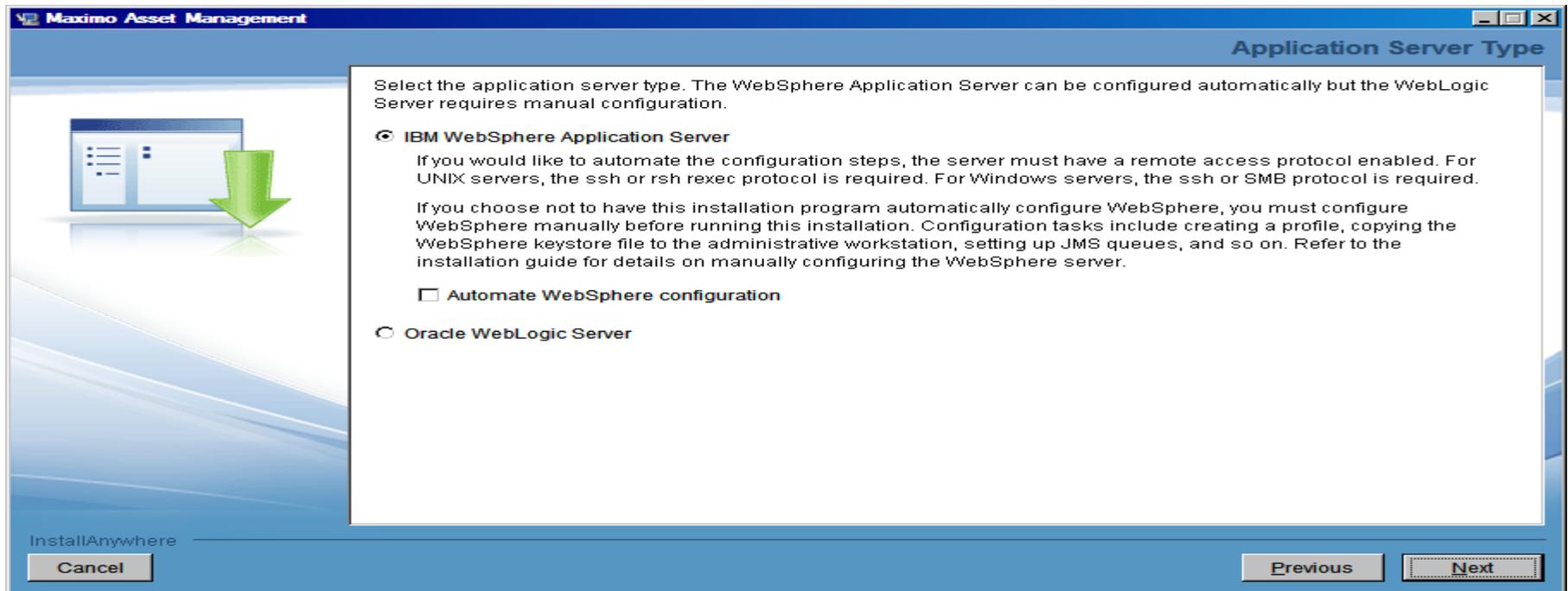
- Follow through the screens filling in the correct data to the Automate Database Configuration Information dialog



- Select Automate database creation and configuration – If only the database was created
- Select The database has already been created and configured – If database, tablespaces, users, etc. were created
- **Recommendation** – Manually configure the database and select The database has already been created and configured

Maximo Installation

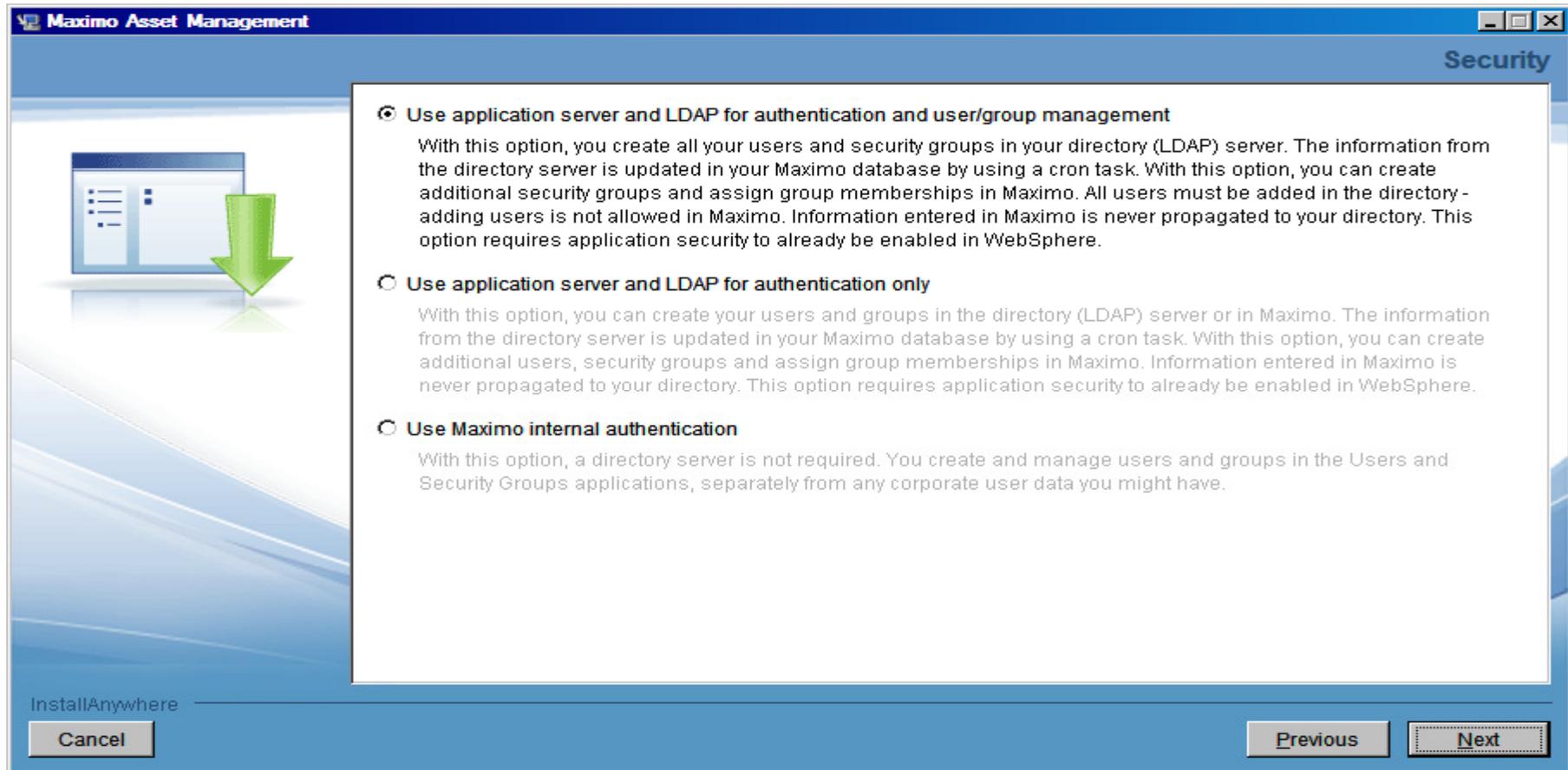
- Follow through the screens filling in the correct data to the Application Server Type, if using WebSphere



- Select Automate – If MXServer and JMS Queues configuration has not been done
- Select Do not automate – If MXServer and JMS Queues configuration has manually been done
- **Recommendation** – Select Automate WebSphere configuration

Maximo Installation

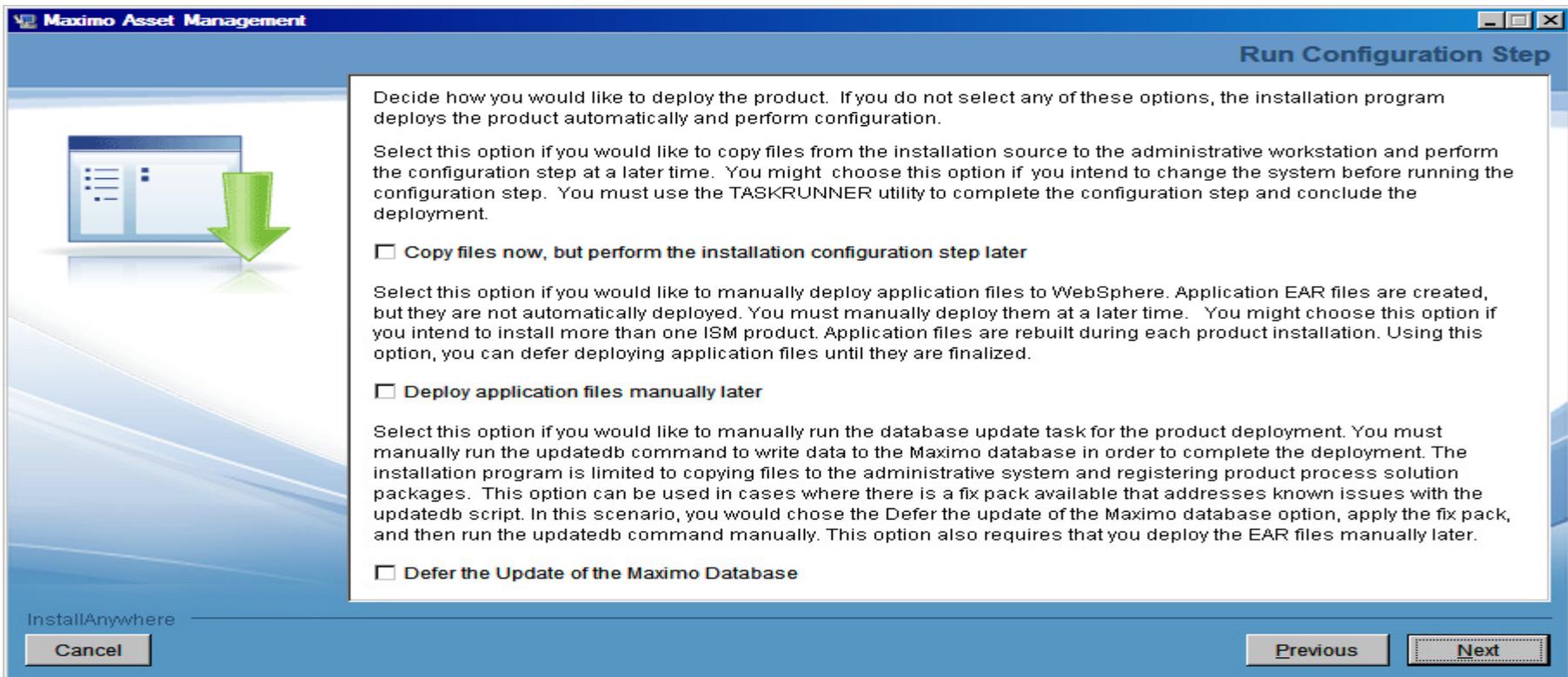
- Follow through the screens filling in the correct data to the Security dialog



- Select Use Maximo internal authentication (Configure Application Server Security after the installation)

Maximo Installation

- Follow through the screens filling in the correct data to the Run Configuration Step dialog



- Select Copy files now, but perform the installation configuration step later
- Select Deploy application files manually later

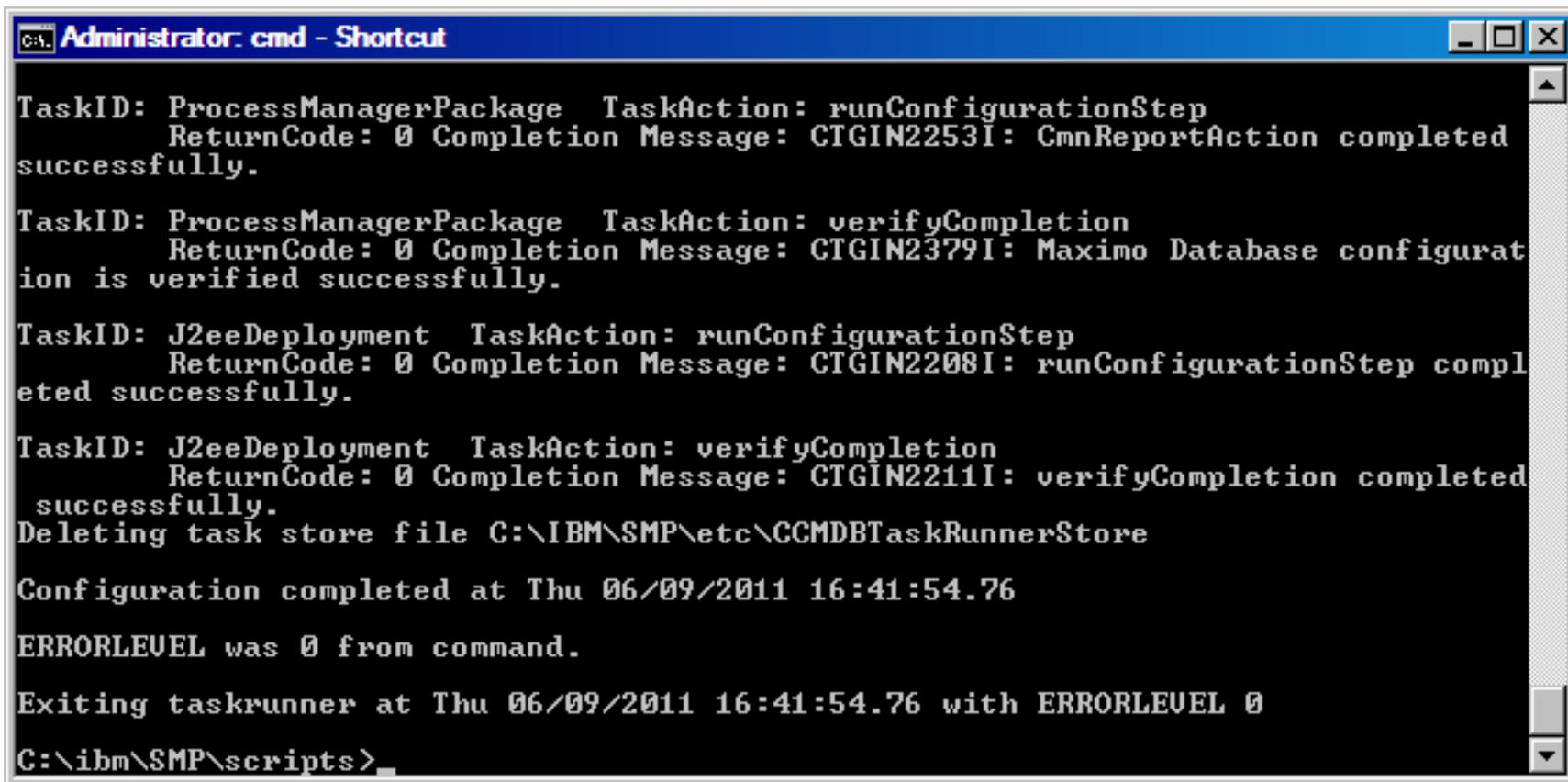
A moment to talk about TaskRunner



TaskRunner

- Runs the configuration and creates the Maximo objects in the database
- From Command Prompt – `ibm\smp\scripts` (open with “Run as administrator”)
 - `taskrunner.bat CONTINUE STOPONERROR`
- Can restart and will start from last completed step

TaskRunner



```
Administrator: cmd - Shortcut
TaskID: ProcessManagerPackage TaskAction: runConfigurationStep
      ReturnCode: 0 Completion Message: CTGIN2253I: CmnReportAction completed
successfully.
TaskID: ProcessManagerPackage TaskAction: verifyCompletion
      ReturnCode: 0 Completion Message: CTGIN2379I: Maximo Database configurat
ion is verified successfully.
TaskID: J2eeDeployment TaskAction: runConfigurationStep
      ReturnCode: 0 Completion Message: CTGIN2208I: runConfigurationStep compl
eted successfully.
TaskID: J2eeDeployment TaskAction: verifyCompletion
      ReturnCode: 0 Completion Message: CTGIN2211I: verifyCompletion completed
successfully.
Deleting task store file C:\IBM\SMP\etc\CCMDBTaskRunnerStore
Configuration completed at Thu 06/09/2011 16:41:54.76
ERRORLEVEL was 0 from command.
Exiting taskrunner at Thu 06/09/2011 16:41:54.76 with ERRORLEVEL 0
C:\ibm\SMP\scripts>
```

Build EAR Files

- From command prompt change to `ibm\smp\maximo\deployment` (open with “Run as administrator”)
 - Run `buildmaximoear`
 - Run `buildmxiehsear`

Deploy EAR Files

■ Deploy EAR files (WebSphere)

- Log into the WebSphere Integrated Solutions Console
- Expand Applications
- Expand Application Types
- Click WebSphere enterprise applications
- If the Maximo and MXIEHS applications are listed
 - Select both and click Uninstall
- Click Install
- Browse to location of the EAR files
(ibm\smp\maximo\deployment\default)
- Click Next
- Click Next
- Click Next
- Click Next
- Select all modules and select MXServer and webserver1 and click Apply
- Click Next

Deploy EAR Files

- Deploy EAR files (WebSphere)
 - Select the maximo_host virtual host for each module
 - Click Next
 - Click Finish
 - When EAR is deployed click Save to Master Configuration
 - Repeat deploy process for Maximo Help EAR

Deployment Engine



Deployment Engine

- Installed to c:\ibm\smp\ctg_de\acsi
- Backup/restore

Deployment Engine

- View contents of DE
 - Run Listiu
 - Command prompt change to Program files\ibm\smp\ctg_de\acsi
 - o Run setenv
 - Change to bin folder
 - o Run listiu

Deployment Engine

```
C:\ibm\SMP\CTG_DE\acsi\bin>listiu
```

```
IU   UUID: DDCE934782398B3E81431666515AC8B5  Name: DE Extensions Interfaces CLI IU   Version: 1.4.0.13
IU   UUID: C37109911C8A11D98E1700061BDE7AEA  Name: Deployment Engine IUVersion: 1.4.0.13
IU   UUID: 39BC4EED169A46BCBABE2CF84E9B92F4  Name: MAM71_PACKAGE_IU   Version: 7.5.0.0
IU   UUID: 3D2FFFEAA4C34409A21320BD5593574A  Name: MADT_Install_Files Version: 7.5.0
IU   UUID: 443D6188FFFFBEEFBABEAB257CFFFFFFF  Name: CCMDB Log Trace Analyzer PM Language Support IU   Version: 7.5.0.0
IU   UUID: 0794CE26E761421987D484491844F7DF  Name: LTA_WAR_Package_IU Version: 7.5.0.0
IU   RootIU UUID: 167210CE0B3E47D395F906A9C939E9DB  Name: MADT_RootIU Version: 7.5.0
IU   RootIU UUID: 56CB9E49C593486BBE0B140FC9796034  Name: LTA_WAR_Package Version: 7.5.0.0
IU   RootIU UUID: 70E41B7F4A204AB9B0131EB6E28E80AA  Name: EAM711Package Version: 7.5.0.0
IU   RootIU UUID: D94240D11C8B11D99F2D00061BDE7AEA  Name: Install IU Version: 1.4.0.13
Feature (RootIU UUID: 56CB9E49C593486BBE0B140FC9796034  Name: Log Trace Analyzer PM Language Support Feature)Feature Name:Log Trace Analyzer PM Language Support Feature
```

Deployment Engine

- View contents of DE
 - Run Solutioninstaller
 - Command prompt change to ibm\smp\bin
 - o Run solutioninstaller –action showinstalled –type all

```
C:\ibm\SMP\bin>solutioninstaller -action showinstalled -type all
```

```
CTGIN0055I: The process solution installation client received the following command: "-action showinstalled -type all".
```

```
CTGIN0054I: The command is correctly formed and will be sent to the process solution installation service.
```

```
CTGIN0059I: There are currently "3" installed process solution element packages that matched the specified criteria.
```

Name	Version	Solution Type	Package Type	Unique Identifier
Application Deployment Toolkit	7.5.0	Process Manager Product	Full Update	167210CE0B3E47D395F906A9C939E9DB
Maximo Asset Management Package	7.5.0.0	Process Manager Product	Full Update	70E41B7F4A204AB9B0131EB6E28E80AA
process automation engine Package	7.5.0.0	Process Manager Product	Full Update	56CB9E49C593486BBE0B140FC9796034

Deployment Engine

- Backup DE
 - From command prompt change to c:\ibm\smp\ctg_de\acsi
 - Run setenv
 - Change to bin folder
 - Run backupdb <backupfile>
 - i.e. backupdb c:\ibm\smp\de_backups\maximo75

Deployment Engine

- **Restore DE**
 - From command prompt change to `c:\ibm\smp\ctg_de\acsi`
 - Run `setenv`
 - Change to bin folder
 - Run `restoredb <backupfile>`
 - i.e. `restoredb c:\ibm\smp\de_backups\maximo75`

Logs



Logs

- DE Runtime Trace Logs (Maximo Admin Machine)
 - C:\ibm\smp\ctg_de\acsi\logs\<>userid<>
 - de_trace.log
 - de_install.log
 - de_msg.log

- Install Trace Logs (Maximo Admin Machine)
 - ibm\smp\logs\CTGInstallTracenn.log
 - ibm\smp\logs\ CTGInstallMessagenn.log
 - ibm\smp\logs\ CTGSummarynn.log
 - ibm\smp\logs\ CTGErrornn.log

- WebSphere Server Trace Logs (WebSphere Machine)
 - ibm\websphere\appserver\profiles\<>maximoprofile-name<>\ logs\mxserver folder
 - SystemOut.log
 - SystemErr.log
 - Trace.log

Logs

- Maximo Logs (Maximo Admin Machine)
 - ibm\smp\maximo\tools\maximo\log

- Package-Specific Action Trace Logs (Maximo Admin Machine)
 - ibm\smp\solutions\logs\`<package-name>`

- LogZipper
 - Zips related log files
 - ibm\smp\scripts

- In temp folder during the installation before ibm\smp\logs folder created

Concerns



Concerns

- Multiple versions of installer
- Installer lays down a file with the build number
 - Build number in file build.name (ibm\smp\logs)
 - Build number 201104152149 – 7.5 GA level (April 2011 release)
 - Build number 201104151659 – 7.5 Refresh #1 level (May 2011)

Concerns

- Properties are stored in the Maximo database, and in `ibm\smp\maximo\applications\maximo\properties\maximo.properties` and `ibm\smp\etc\install.properties`
 - `maximo.properties` precedes database value
 - Product installations look at both properties files
 - Properties and values in the `maxprop` and `maxpropvalues` tables

Troubleshooting



Troubleshooting

- Gather the logs via logzipper
- Connectivity test tools
 - Remote connectivity – TestRXA
 - ibm\smp\scripts folder
 - Testrxa <hostname> <username> <password>
 - WebSphere connectivity – Thinwsadmin
 - lbm\smp\wasclient folder
 - Thinwsadmin –username <username> -password <password>
 - Verify values in the thinwsadmin are correct for WebSphere environment
- Properties in maximo.properties, install.properties and maxpropvalues
 - Maximo.properties – ibm\smp\maximo\applications\maximo\properties
 - Install.properties – ibm\smp\etc
 - Maxpropvalues table

Troubleshooting

- Errors during the taskrunner process
 - Gather the logs via logzipper
 - Review the CTGSummary00.log and CTGError00.log in the ibm\smp\logs folder
 - The last error in the log may not be the issue. Search up from that error
 - Ac.si errors are typically DE errors
 - Review the de_trace.log in the C:\ibm\smp\ctg_de\acsi\logs\

Troubleshooting

- Errors during a solution install step during taskrunner
 - Review the solution logs in the `ibm\smp\solutions\logs<solution>` folder

- Errors during update database step during taskrunner
 - Review the `updatedb.log` in the `ibm\smp\maximo\tools\maximo\logs` folder

Troubleshooting

- Once errors are addressed taskrunner can be started again
 - From command prompt change to `ibm\smp\scripts`
 - o `taskrunner CONTINUE STOPONERROR`

Troubleshooting

- **Summary**
 - Review the solution installer and DE logs
 - Verify install related properties in the maximo.properties file, maxprop table, maxpropvalue table, and install.properties
 - Verify Deployment Engine status
 - LogZipper to send logs to IBM Maximo Support

Resources



Resources

- Maximo Info Center
 - <http://publib.boulder.ibm.com/infocenter/tivihelp/v49r1/index.jsp?topic=/com.ibm.mam.doc/welcome.html>

- Maximo 7.5 What's New
 - <http://publib.boulder.ibm.com/infocenter/tivihelp/v49r1/index.jsp?topic=/com.ibm.mam.doc/overview/whatsnewmam75.html>

- System Requirements
 - <http://www.ibm.com/developerworks/wikis/display/maximo/System+Requirements+for+Version+7.5+Maximo+Products>

- Maximo 7.5 Packaging
 - <https://www-304.ibm.com/support/docview.wss?uid=swg21498420>

- Maximo Asset Management 7.5
 - <https://www-304.ibm.com/support/docview.wss?uid=swg24029458>

- Configuration Maxtrix
 - <https://www-304.ibm.com/support/docview.wss?uid=swg27014419>

Resources

- WebSphere Settings
 - <https://www-304.ibm.com/support/docview.wss?uid=swg21498645>
- Pre-Req Checker
 - <https://www-304.ibm.com/support/docview.wss?uid=swg21498097>
- process automation engine wiki
 - <https://www.ibm.com/developerworks/wikis/display/tivolispa/Home>
- Performance Best Practices White Paper
 - <https://www-304.ibm.com/support/docview.wss?uid=swg21440192>
- Windows 2008 command prompt
 - <https://www-304.ibm.com/support/docview.wss?uid=swg21458965>
- Installation of Maximo 7.x on Windows 2008
 - <https://www-304.ibm.com/support/docview.wss?uid=swg21502398>
- Multiple Environments on one Administrative Machine
 - <https://www-304.ibm.com/support/docview.wss?uid=swg21498585>

Q&A



Q&A

Questions